Short Communication

Perspectives for Cancer Epidemiology Research in the Middle East*

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Colon Cancer (CC) is a common neoplasm among the Jewish population in Israel. There are, however, distinct differences in Colon Cancer rate and age at diagnosis between Jewish and Arab males and females in Israel as well as other countries in the Middle East. Colon Cancer is a multifactorial disease and environmental exposures, personal habits and genetic factors converge to result in CC phenotype. The Middle East Cancer Consortium (MECC) aims at supporting the evaluation of these factors in three populations: Israel (Jewish and Arab), Jordanian and Palestinian.

Keywords: Colon; Cancer; Epidemiology; Middle east

BACKGROUND

Since its establishment in 1996 MECC has succeeded in creating a regional network of cancer registry.[1,2] The following countries are directly involved in the above effort: Israel, Jordan, Egypt, Cyprus and The Palestinian Authority. The National Cancer Institute (NCI) in the United States of America has been extending continuous financial and professional support for its operations and development. The collaborative work within the above framework yielded further understanding among different scientific groups in the region along with tangent research findings.[3–5]

OBJECTIVES

MECC is planning on sustaining regional infrastructures for research collaborations; in order to address new epidemiological issues as related to cancer incidence, mortality and surveillance. This is hoped to be achieved by expanding our regionwide network of cancer registry centers, in ways that will facilitate scientific interactions and the sharing of information and resources.

It has already been shown that cancer incidence trends differ between countries in the Middle East (Table I).

However, in order to make exact regional comparisons one needs to introduce a world standard adjustment. Hence, rates should be age-adjusted to the world standard population. Age-adjustment eliminates differences in rates when a population in one country has a different age distribution from that of a neighboring country.

METHODS

As already indicated above, age-adjustment is essential since one has to compare equivalent age structures; or else one is going to obtain skewed analyses. Moreover, since most leading cancers are age-related, life expectancy plays an important role as to how cancer rates are evolving and to what extent they may affect comparisons. One should note that the proportion of elderly people in year 2000 is about 14% worldwide; and this figure may increase to 25% by the year 2050.

In the developed countries, 46% of cancer occurred in people over age 64 in year 2000. That number is estimated to hit 71% in year 2050.

In the future, MECC plans to lend special emphasis to the exploration of potential causes of cancer among diverse populations. The social and cultural diversities in the Middle East present challenges and opportunities in

etiology and surveillance research. Consequently, MECC plans to expand surveillance data systems and training to improve capacity for monitoring in cancer control. Such a regional research activity cannot thrive without resources that sustain the proposed collaborative project. MECC plans to continue to conduct and coordinate such activities through NIH/NCI funds. In this framework high priority will be given to advanced training and education in this research area. MECC via the International Office of NCI, Bethesda, plans to continue expanding its efforts to provide opportunities for physicians, scientists and paramedical personnel to use advanced technologies in leading centers in the United States. MECC and NCI's goal is to promote access to cancer-related information to the public, patients and health professionals.

CANCER STATISTICS

For many cancers, including that of colorectal cancers; 5-years survival rates have increased in the last few decades. One possible explanation for the increased survival rates is not that patients are living longer, but that cancer is simply diagnosed earlier. However, increased survival rates by themselves, do not necessarily correlate with the quality of life.

Many agree that an important indication to progress is a decrease in mortality rates; and indeed, for several cancers the mortality rates have been decreasing. Yet, changes in the mortality rates will impact on the population only over an extended period of time rather than in a particular year.

As the present meeting focuses on GI malignancies, a natural question to raise refers to the status of colorectal cancer in the Middle East: Within its different subpopulations, in males and females. Further, is the individual risk of developing colon cancer strongly linked to his/her age?

An additional issue refers to the differentiation of "number" versus "rates". If one is going to determine the morbidity of colon cancer in a particular country and/or population; It is imperative to remember that there is a difference between colon cancer rates and the actual number of new cases of colon cancer or of colon cancer deaths in a specified year.

People tend sometimes to confuse a rate with a number. When death rates are claimed to go down, that does not necessarily mean that the number of deaths due to cancer is going down. As the population is increasing and getting older, one would expect more deaths. Yet, overall cancer mortality rates for the United States having been dropping since about 1991.

PRELIMINERY RESULTS

When carrying cancer population studies in a certain region in the world, there is a need for age adjustment. The reasoning for that is to make rates comparable at different times and different places. If we compare the cancer incidence rates in Israel (1998) with those in Jordan (1999) we will find a large difference. However, Israel's population are much older than that of Jordan's population (50–70 years: Israel 13.6% of total; Jordan 7.5% of total; 70 + years: Israel 6.4% of total; Jordan 1.5% of total).[2] Even following age adjustment colon cancer rates are markedly different between the two populations of the Israeli Jews and Jordan's Arabs (Table I). A similar trend has been found for the Palestinian population. The non Jews Israelis, which for the most part are Arabs, reveal closer patterns to the Arabs in Jordan and Palestine, than to the Jews in Israel (Table I). Overall, the incidence rate of colorectal cancer among the Jewish population in Israel is close to that found in Western Europe (France, Germany) and North America (USA, Canada) (Table I).

CONCLUSIONS

The United States National Cancer Institute SEER program has been using the distribution of the 1970

TABLE I   Colorectal Cancer—Age-adjusted incidence rate, percentage of male or female cancers and time of diagnosis

Country	Males		Females		♂ + ♀
	Incidence rate	%	Incidence rate	%	Median age at diagnosis
Jordan 1999	10.4	8.7	13.2	9.7	58
Palestinian Authority (1995-2000)	11.0	7.5	10.0	7.3	+55
Israel					
Jews	44.5	17.5	24.8	14.8	71.4
Non-Jews (1998)	15.0	6.8	15.1	8.8	60.8
Cyprus (1999)	17.0	9.3	13.3	8.4	69
Turkey (Izmir) (1995–96)	4.5	5.5	3.5	6.8	60
Egypt (2000)	5.2		3.5		
France (Haut-Rhin) (1998)	39.8	6.5	29.6	9.0	70 +
Germany (Saarland) (2000)	45.0	14.0	31.3	17.1	70 +
U.S.A (Los-Angeles) (2000)	40.5	11.9	30.7	12.6	70 +
Canada (2000)	40.8	14.5	30.5	13.7	70 +

The data from Middle Eastern countries are based on MECC findings, whereas those of Europe and North America are based on IARC-WHO data.

United States population. However, this is going to change, and all statistics generated by agencies in the U.S. Department of Health and Human Services will be adjusted to the age distribution of the 2000 population.

Because the population in the United States in the year 2000 is older than the 1970 population, it will appear that some of the cancer rates are increasing when actually only the *standard* for age-adjusting is changing.

While cancer screening is generally low throughout the Middle East, it is especially low for colorectal cancer, and is substantially less than that currently prevails for mammography.

A future goal for MECC is to promote investigator-initiated epidemiological research involving personal interviews and analyses of genetic and environmental factors. This will be hopefully the first comparative Arab–Israeli study integrating state of art methodologies, to try to decipher the basis for the observed differences in colon cancer morbidity. As such, it is hoped that it will contribute to the enhancement of collaborative work relationships among scientists and physicians in these countries.[6]

Acknowledgements

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